

A Cross-Sectional Study to Assess the Quality of Life of Perimenopausal and Post menopausal Women in Rural Etawah, Uttar Pradesh, India

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ABSTRACT

Background: Perimenopause is the period in a woman's life during which she passes from the reproductive to the nonreproductive stage. According to the 2008 estimates, the number of menopausal women in India was 43 million. Projected values in 2026 depict the menopausal population at 103 million. Due to the increasing life expectancy, improved quality of life is imperative to decrease the disability and frailty of a society. **Objectives:** To study the quality of life of perimenopausal women in rural areas of Etawah district, Uttar Pradesh, and the various factors associated with it. **Materials and Methods:** This is a community-based cross-sectional study conducted in 4 villages in the Saifai block of Etawah district, Uttar Pradesh, India. One hundred and ninety-nine healthy, perimenopausal women of the age group 45–55 years were included in the study. Data were collected on sociodemographic variables, and Menopause Specific Quality of Life Questionnaire - Intervention version questionnaire was used to assess the quality of life. **Results:** The mean age of attainment of menopause was 45.38 ± 3.58 years. Majority of the women experienced physical (100%) and psychosocial (94.5%) symptoms; the most common symptom being “decrease in physical strength” (86.4%) and being able to “accomplish less than previously” (80.4%). Women who handled stress poorly showed severe vasomotor ($P = 0.047$) and psychosocial ($P = 0.014$) symptoms. Postmenopausal women who regularly exercised were 52.6% less likely to have vasomotor symptoms (odd's ratio OR 0.474 (0.235–0.960), $P = 0.038$). **Conclusion:** The quality of life among the study population was affected by the physical and psychosocial problems they experienced. By taking appropriate preventive measures, these can be ameliorated, and further deterioration can be checked.

KEYWORDS: Cross-sectional, perimenopause, postmenopause, quality of life, rural, women

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INTRODUCTION

Middle age is a phase of transition in a woman's life when she juggles multiple caring responsibilities, providing care and support to both parents and children or grandchildren. She is, in fact “sandwiched” in her duty as a care provider between the two generations.^[1] Around the same time, her body also gears up for a major change called menopause, when the reproductive capacity winds down.

The absence of menstrual periods for 12 months is when “natural” menopause is said to have occurred.

The function of the ovary is unique in the fact that the age-associated decline in function progressing to frank failure appears to have remained constant despite the increase in life expectancy experienced by women over the last century.^[2]

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According to the estimates in 2008, the number of menopausal women was at 43 million in India. Projected values in 2026 depict the menopausal population to be 103 million.^[3] The mean age at which Indian women attain natural menopause is estimated at 46.2 ± 4.9 years, while the average age in their Western counterparts is 51 years.^[4,5]

Menopause transition or perimenopause is the period in a woman's life during which she passes from the reproductive to the nonreproductive stage. This phase falls 4–7 years on either side of menopause.^[6] Rapid oocyte depletion and decline in ovarian function ensues, resulting in the reduction of the hormones produced by the granulosa cells, namely estrogen and inhibin. The hypoestrogenic state produced at the dawn of menopause influences various organ systems in the body. Depending on their time of onset, the effects can be immediate (vasomotor symptoms, mood swings, and sexual dysfunction), intermediate (genital atrophy, skin changes, urodynamic effects, and pelvic organ prolapse) and long term (osteoporosis, cardiovascular effects and dementia).^[5]

Quality of life suffers a gradual decline during this period due to various problems associated with estrogen deficiency and aging. Due to the increasing life expectancy, women are expected to live 25%–30% of their lives in the postmenopausal period.^[5] Thus, improved quality of life is imperative to decrease the disability and frailty of a society. As majority of the Indian population reside in rural areas (68.84%) and women living in rural areas have different menopausal symptom profiles than their urban counterparts, this study was undertaken to study the quality of life of perimenopausal women in rural areas of Etawah district, Uttar Pradesh and the various factors associated with it.

MATERIALS AND METHODS

This study is a community-based cross-sectional study conducted in four villages in the Saifai block of Etawah district, Uttar Pradesh, India, from October 2018 to February 2019. There are eight blocks in Etawah district, of which Saifai block was selected randomly by the lottery method. All the villages of the block were listed, from which four villages were selected randomly.

Sample size

Sample size calculated was 199 using G power software version 3.1, with the level of significance at 0.05 for an effect size of 0.23, for yielding 90% power.

Inclusion criteria

All healthy perimenopausal women of 45–55 years who gave written informed consent to participate in the study

were included. Perimenopausal women include women in menopause transition (those with irregular menstrual cycles [that is, either the interval between cycles may be altered by 7 or more days, or two or more skipped cycles and at least one intermenstrual interval of 60 days or more]^[7]) and postmenopausal women (who did not have menstrual periods for the past 12 months or more).

Exclusion criteria

Women receiving any kind of hormone therapy or having undergone hysterectomy.

Women having severe comorbidities such as cancer, myocardial infarction, uncontrolled hypertension. Women unwilling to participate in the study or not giving consent.

Thus, 199 perimenopausal women were interviewed by a predesigned, pretested, and validated questionnaire by the house-to-house surveys. The questionnaire consists of sociodemographic profiles, relevant history (marital and obstetric history, gynecological history, diet history, personal history), and the quality of life questionnaire. The quality of life was assessed using The Menopause Specific Quality of Life Questionnaire - Intervention version developed by Hilditch *et al.*^[8] It is a 32 item questionnaire with menopausal symptoms distributed among four domains, namely vasomotor (3 items), psychosocial (7 items), physical (19 items) and sexual (3 items). The whole questionnaire was translated into the Hindi language, and hence that uniformity of the questions was maintained by the interviewer for all participants. If a particular menopausal symptom in question was present in the participant, she was asked to score the intensity of botheration by the symptom on a scale of 0–6. If the participant could not comprehend the scale, we provided them with a visual scale of 0–6 depicted by increasing the size of colored circles, representing the increasing intensity of symptoms, and the participant was asked to point to the circle, which rightly portrayed the magnitude of her symptoms. This questionnaire shows strong test–retest reliability and Cronbach's alpha at 0.78. It shows excellent face validity with high construct validity at 0.78–0.80. Each domain is scored separately. For analysis, the item scores were converted into scores ranging from 1 to 8 in the format provided in the manual of the questionnaire. Each domain mean ranges from 1 to 8. The overall questionnaire score is the mean of the domain means.

Ethical clearance was obtained from the University Ethics Committee. Informed written consent was taken from the study participants before the start of the study.

Data were entered in Microsoft Excel, and analysis was performed using the Statistical Package for

the Social Sciences software Version 24.0 (IBM Inc. Chicago, USA). Categorical variables were assessed using Chi-square test and Fisher exact test. The strength of the association between variables was established by binary regression model and computing odd's ratio (OR). Nonparametric tests of Mann–Whitney U and Kruskal–Wallis were used to find the association of quantitative variables (median scores) with sociodemographic variables.

RESULTS

A total of 199 women were included in the study, of which 31 belonged to the menopausal transition group and 168 women in the postmenopausal group. The mean age of the study population was 49.78 ± 3.41 years. The mean age at menarche was 14.3 ± 1.38 years. The mean age of attainment of menopause was 45.38 ± 3.58 years. Ten women in the study population had premature menopause (<40 years) and 7 had late menopause (beyond 52 years).

The sociodemographic characteristics of the study population are given in Table 1.

Table 1: Distribution of sociodemographic profile of the study population

Characteristic	Frequency, n (%)
Age group	
45-50	124 (62.3)
51-55	75 (37.7)
Religion	
Hindu	190 (95.5)
Muslim	9 (4.5)
Caste	
General	32 (16.1)
OBC	54 (27.1)
SC/ST	113 (56.8)
Education	
Illiterate	119 (59.8)
Literate	80 (40.2)
Occupation	
Housewife	164 (82.4)
Working	35 (17.6)
Socioeconomic status	
Upper	4 (2)
Middle	111 (55.8)
Lower	84 (42.2)
Marital status	
Married	166 (83.4)
Divorced/separated	3 (1.5)
Widowed	30 (15.9)
Type of family	
Nuclear	60 (30.2)
Joint	126 (63.3)
Three-generation	13 (6.5)

In the study population, majority of the women were illiterate (59.8%, $n = 119$), housewives (82.4%, $n = 164$), belonging to middle socioeconomic class (55.8%, $n = 111$) according to Modified B. G. Prasad classification, and living in joint families (63.3%, $n = 126$). Most of the study population were Hindu by religion (95.5%, $n = 190$), scheduled caste by category (56.8%, $n = 113$) and not involved in physical activity (68.8%, $n = 137$). Most of the study subjects had regular intake of milk and milk products (74.4%, $n = 148$) but not seasonal fruits (37.2%, $n = 74$).

The distribution of prevalence of the major menopausal symptoms among study participants and their respective median scores are summarized in Table 2. Among the study participants, at least one symptom in the physical domain was experienced by all the participants ($n = 199$), the most common being “decrease in physical strength” (86.4%), “decrease in stamina” (80.4%) and “feeling tired and worn out” (80.4%). Urinary incontinence was seen in 22.6% of individuals. In the psychosocial domain, 94.5% ($n = 188$) women experienced at least one symptom, the feeling of having the ability to “accomplish less than previously” being the predominant one (80.4%). The symptoms of the sexual domain were experienced by 68.3% ($n = 128$) of women, and “decrease in sexual desire” was the most common complaint. Vasomotor symptoms were comparatively less among the study group, with at least one symptom being experienced by about 40% ($n = 81$) of the participants. Hot flashes were present in 38.2% of participants.

Women of the higher age group of 50–55 years were found to have increased symptoms of “accomplishing less than previously” ($P = 0.005$), “decreased stamina” ($P = 0.014$) and “decreased sexual desire” ($P = 0.037$), compared to those of 45–50 years.

Association between the menopausal symptoms in vasomotor, psychosocial and sexual domains and various sociodemographic variables were computed for menopausal transition group and postmenopausal women separately using Chi-square test and are summarized in Tables 3 and 4. In the menopausal transition group ($n = 31$), the presence of symptoms of the sexual domain was significantly associated with the caste, with those in the scheduled category being the worst sufferers ($P = 0.007$). The way one handles stress showed a significant association with the presence of symptoms of the sexual domain ($P = 0.027$).

Among postmenopausal women ($n = 168$), psychosocial symptoms were significantly associated with caste ($P = 0.023$), socioeconomic status ($P = 0.000$) and how well one handled stress ($P = 0.002$). The frequency

Table 2: Distribution of prevalence of major menopausal symptoms and their respective median scores in the study population

Symptom	Frequency (n=199), n (%)	Median score of symptom (IQR)
Hot flushes	76 (38.2)	5 (3.25-7)
Night sweats	42 (21.1)	5 (3.6)
Sweating	60 (30.2)	4.5 (4-5)
Dissatisfaction with my personal life	63 (31.7)	4 (4-6)
Feeling anxious or nervous	110 (55.2)	5 (4-7)
Poor memory	112 (56.3)	4 (4-6)
Accomplishing less than I used to	160 (80.4)	5 (4-6)
Feeling depressed, down or blue	78 (39.2)	5 (4-6)
Being impatient with other people	57 (28.6)	5 (4-7)
Aching in muscles and joints	136 (68.3)	5 (4-7)
Feeling tired or worn out	160 (80.4)	5 (4-6)
Difficulty sleeping	49 (24.6)	5 (3-7)
Aches in back of the neck or head	71 (35.7)	5 (4-6)
Decrease in physical strength	172 (86.4)	4.5 (4-6)
Decrease in stamina	160 (80.4)	4 (3-6)
Lack of energy	120 (60.3)	4 (3-5)
Weight gain	46 (23.1)	5 (3-6)
Low backache	105 (52.8)	5 (4-7)
Frequent urination	51 (25.6)	5 (4-6)
Involuntary urination when laughing or coughing	45 (22.6)	4 (3-6)
Decrease in my sexual desire	125 (62.8)	5 (4-6)
Vaginal dryness	45 (22.6)	4 (4-5)
Avoiding intimacy	114 (57.3)	4 (3-6)
Leg pains or cramps	101 (50.8)	5 (4-6)

IQR: Interquartile range

Table 3: Distribution of association between the presence of symptoms in various domains of menopausal quality of life and sociodemographic factors among menopausal transition group (n=31)

Sociodemographic variable	Vasomotor symptoms, n (%)		Psychosocial symptoms, n (%)		Sexual symptoms, n (%)	
	Present (n=10)	Absent (n=21)	Present (n=30)	Absent (n=1)	Present (n=20)	Absent (n=11)
Caste						
General and OBC	5 (41.7)	7 (58.3)	12 (100)	0 (0)	4 (33.3)	8 (66.7)
SC/ST	5 (26.3)	14 (73.7)	18 (94.7)	1 (5.3)	16 (84.2)	3 (15.8)
χ^2, P	0.793, 0.373		*, 0.463		*, 0.007	
How well one handles stress						
Good	4 (44.4)	5 (55.6)	8 (88.9)	1 (11.1)	3 (33.3)	6 (66.7)
Average	4 (26.7)	11 (73.3)	15 (100)	0 (0)	13 (86.7)	2 (13.3)
Poor	2 (28.6)	5 (71.4)	7 (100)	0 (0)	4 (57.1)	3 (42.9)
χ^2, P	*, 0.647		*, 0.283		*, 0.027	

*Fisher exact test used

of vasomotor symptoms was significantly less in those who exercised ($P = 0.036$).

The median scores of each domain were compared with how well one handles stress using the Kruskal–Wallis H test in Table 5. Women who handled stress poorly showed severe vasomotor ($P = 0.047$) and psychosocial ($P = 0.014$) symptoms.

Among the menopausal transition group, women belonging to higher castes were 90.6% less likely

to experience symptoms of the sexual domain (OR 0.094 [0.017–0.524], $P = 0.007$) as given in Table 6.

Table 7 shows that among the postmenopausal group, women belonging to higher castes were 82.1% less likely to have psychosocial symptoms (OR 0.179 [0.037–0.872], $P = 0.033$). Similarly, women who regularly exercised were 52.6% less likely to have vasomotor symptoms (OR 0.474 [0.235–0.960], $P = 0.038$).

Table 4: Distribution of association between the presence of symptoms in various domains of menopausal quality of life and sociodemographic factors among postmenopausal women (n=168)

Sociodemographic variable	Vasomotor symptoms, n (%)		Psychosocial symptoms, n (%)		Sexual symptoms, n (%)	
	Present (n=71)	Absent (n=97)	Present (n=158)	Absent (n=10)	Present (n=108)	Absent (n=60)
Caste						
General and OBC	35 (47.3)	39 (52.7)	66 (89.2)	8 (10.8)	47 (63.5)	27 (36.5)
SC/ST	36 (38.3)	58 (61.7)	92 (97.9)	2 (2.1)	61 (64.9)	33 (35.1)
χ^2, P	1.374, 0.241		*, 0.023		0.034, 0.853	
Socioeconomic status						
Upper	2 (66.7)	1 (33.3)	1 (33.3)	2 (66.7)	2 (66.7)	1 (33.3)
Middle	39 (40.2)	58 (59.8)	91 (93.8)	6 (6.2)	61 (62.9)	36 (37.1)
Lower	30 (44.1)	66 (97.1)	66 (97.1)	2 (2.9)	45 (66.2)	23 (33.8)
χ^2, P	*, 0.608		*, <0.001		*, 0.907	
Exercise						
Yes	15 (30)	35 (70)	44 (88)	6 (12)	31 (62)	19 (38)
No	56 (47.5)	62 (52.5)	114 (96.6)	4 (3.4)	77 (65.3)	41 (34.7)
χ^2, P	4.386, 0.036		*, 0.067		0.162, 0.687	
How well one handles stress						
Good	21 (32.8)	43 (67.2)	55 (85.9)	9 (14.1)	37 (57.8)	27 (42.2)
Average	39 (49.4)	40 (50.6)	78 (98.7)	1 (1.3)	56 (70.9)	23 (29.1)
Poor	11 (44)	14 (56)	25 (100)	0 (0)	15 (60)	10 (40)
χ^2, P	4.007, 0.135		*, 0.002		2.867, 0.238	

*Fisher's exact test used

Table 5: Distribution of association between median scores of symptoms in each domain of menopausal quality of life and how well one handles stress

How well one handles stress	n, median score (IQR)			
	Vasomotor symptoms	Psychosocial symptoms	Physical symptoms	Sexual symptoms
Good	25, 5 (3.5-6)	63, 4.5 (3.5-5.5)	73, 4.5 (4-5.75)	40, 4 (3.5-6)
Average	43, 4 (3-6)	93, 4 (4-5)	94, 4 (4-5)	69, 4 (3.5-5)
Poor	13, 5.5 (4.5-7)	32, 5.5(4-6)	32, 5 (4-6)	19, 5 (4-7)
Total	81, 5 (3.5-6)	188, 4.5(4-5.88)	199, 4.5 (4-5.5)	128, 4.5 (4-6)
P	0.047	0.014	0.066	0.086

IQR: Interquartile range

Table 6: Distribution of strength of association between the category of caste and symptoms of sexual domain among menopausal transition group

Sociodemographic variables	Sexual domain, OR (95% CI)
General + OBC category	0.094 (0.017-0.524)
SC category	1

OR: Odd's ratio, CI: Confidence interval

Table 7: Distribution of strength of association between sociodemographic variables with menopausal quality of life domains among the postmenopausal group

Sociodemographic variables	OR (95% CI)
Caste	Psychosocial domain
General + OBC	0.179 (0.037-0.872)
SC/ST	1
Exercise	Vasomotor domain
Yes	0.474 (0.235-0.960)
No	1

OR: Odd's ratio, CI: Confidence interval

DISCUSSION

According to the current study, the mean age of menopause attainment was 45.38 ± 3.58 years. Mean age at menopause in Indian women ranges from 44.58 ± 4.26 years and in the Western world from 48.0 to 51 years.^[9] Similar age at menopause was observed in other studies.^[4,10]

Most of the study population were Hindu by religion (95.5%), scheduled caste by category (56.8%), housewives (82.4%) and belonging to the middle socioeconomic class (55.8%). As the study was conducted in a rural area, most of the study participants lived in joint families (63.3%) and have had no formal education (59.8%) and not involved in exercise (68.8%). A study by Karmakar *et al.* showed a comparable sociodemographic profile with our study with respect to religion, education, occupation, type of family, and marital status.^[11] The study results of Goyal *et al.* also conformed to a similar demographic profile.^[12]

Various studies show the preponderance of certain symptoms over others among urban and rural populations. A study by Sharma and Mahajan in Jammu shows a statistically significant increase in the severity of vasomotor and psychological symptoms among the rural population compared to their urban counterparts.^[13] Another comparative study by Goyal *et al.* in Allahabad reports a lower prevalence of vasomotor symptoms (34.5% vs. 39.5%) and a higher prevalence of physical symptoms (e.g., joint pain, 57% vs. 55.5%) and stress incontinence (10.5% vs. 8.5%) among rural women in comparison to urban women.^[12] A study by Nayak *et al.* in rural Karnataka reported a higher proportion of physical symptoms, namely, feeling tired and worn out (67.5%), decreased physical strength (63.6%) and decreased stamina (64%) and psychosocial symptom like poor memory (73.7%); hot flashes were present in 32% while decrease in sexual desire was reported in 26.8%.^[14] Similarly, a study by Poomalar and Arounassalame in rural Puducherry showed an overall prevalence of physical symptoms at 99% (the most common symptom being low backache-79%), psychosocial symptoms at 93.2%, sexual symptoms at 82%, and vasomotor symptoms at 80%.^[15]

In the present study, the most common symptom was that of the physical domain, followed by psychosocial, sexual, and vasomotor domains, with at least one symptom being experienced by 100%, 94.5%, 68.3%, and 50%, respectively, in each of the domains. In the physical domain, the symptoms of “decrease in physical strength” (86.4%), “decrease in stamina” (80.4%), and “feeling tired and worn out” (80.4%) were the most common. The psychosocial symptom of being able to “accomplish less than previously” (80.4%) and the sexual symptom of “decrease in sexual desire” (62.8%) were the predominant complaints. Vasomotor symptoms were comparatively less among the study participants, with hot flashes seen in 38.2% of participants. These results are consistent with the findings of Poomalar and Arounassalame, Nayak *et al.*, and Goyal *et al.*, but not with that of Sharma and Mahajan.^[12-15]

According to the present study, regular physical activity was found to be protective against vasomotor symptoms in the postmenopausal group. Furthermore, higher categories of caste were exhibited less symptoms of the sexual domain and psychosocial domain in menopausal transition group and postmenopausal groups, respectively, probably due to the higher standard of life.

In a study by Vijayalakshmi *et al.*, a significant association was found between the severity of symptoms

of women in menopausal transition with socio-economic status (χ^2 : 12.47, $P = 0.052$) and chronic illness status (χ^2 :16.56, $P = 0.035$).^[16] In a study by Mohamed *et al.* in Egypt, significant association was found between menstrual status and severity of menopausal symptoms ($\chi^2 = 9.489$, $P = 0.009$), age, and severity of symptoms ($\chi^2 = 6.93$, $P = 0.031$). Mean scores of quality of life of the physical domain were significantly higher in the postmenopausal group ($t = 2.11$, $P = 0.03$).^[17]

In a study by Nisar and Ahmed in Pakistan, significant difference was observed in the median scores of quality of life with respect to the menstrual status. The median scores of physical domain was significantly higher in postmenopausal group than menopausal transition group (1.9 [1.5,2.1] vs. 1.6 [1.4,1.9], $P = 0.002$); in the psychosocial domain, the median scores were significantly higher in the menopausal transition group than postmenopausal group (2.0 (1.7,2.4) vs. 1.6 [1.4,2], $P = 0.003$).^[18]

In a study by Nayak *et al.* in Karnataka, significant difference was observed in median scores in various domains with respect to menstrual status. Vasomotor symptoms were significantly higher in postmenopausal group than pre-menopausal group (2.33 [0, 4.59] vs. 0 [0, 2.33], $P = 0.001$). Similarly, psychosocial and physical symptoms were also higher in the postmenopausal group at $P = 0.016$ and $P = 0.009$, respectively.^[14] In a study by Poomalar and Arounassalame in Puducherry, vasomotor and sexual symptoms were more in menopausal transition groups than early or late postmenopausal groups ($\chi^2 = 6.244$, $P = 0.044$ and $\chi^2 = 20.7$, $P < 0.001$, respectively). Psychosocial symptoms were more in the late postmenopausal group than menopausal transition or early postmenopausal groups ($\chi^2 = 8.41$, $P = 0.015$).^[15]

CONCLUSION

According to this study, the majority of women in the menopausal age group suffer from physical and psychosocial problems. Regular physical activity and stress reduction can go a long way in alleviating these problems and boost the quality of their lives. This brings in the role of prevention using health education and creating awareness among these women. Proper attention to the health problems and emotional needs of these women can indirectly help in the health of the family and community at large.

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Conflicts of interest

There are no conflicts of interest.

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